HP 5120 EI Switch Series

Data sheet

Product overview

The HP 5120 EI Switch Series is comprised of Gigabit Ethernet switches that support static Layer 3 routing, diversified services, and IPv6 forwarding, as well as provide up to four 10-Gigabit Ethernet (10 GbE) extended interfaces. Unique Intelligent Resilient Framework (IRF) technology creates a virtual fabric by managing several switches as one logical device, which increases network resilience, performance, and availability while reducing operational complexity. These switches provide Gigabit Ethernet access and can be used at the edge of a network or to connect server clusters in data centers. High scalability provides investment protection with two expansion slots, each of which can support two-port 10 GbE expansion modules. High availability, simplified management, and comprehensive security control policies are among the key features that distinguish this series.

Key features

- High scalability for investment protection
- Support for multiple services
- Comprehensive security control policies
- Diversified Quality of Service (QoS) policies
- Excellent manageability

Features and benefits

Quality of Service (QoS)

- **Broadcast control:** allows limitation of broadcast traffic rate to cut down on unwanted network broadcast traffic
- **Advanced classifier-based QoS:** classifies traffic using multiple match criteria based on Layer 2, 3, and 4 information; applies QoS policies such as setting priority level and rate limit to selected traffic on a port, VLAN, or whole switch
- **Powerful QoS feature:** supports the following congestion actions: strict priority (SP) queuing, weighted round robin (WRR), and SP+WRR
- **Traffic policing:** supports Committed Access Rate (CAR) and line rate

Management

- **Friendly port names:** allow assignment of descriptive names to ports
- **Remote configuration and management:** is available through a secure Web browser or a command-line interface (CLI)
- **Manager and operator privilege levels:** enable read-only (operator) and read/write (manager) access on CLI and Web browser management interfaces
- **Command authorization:** leverages HWTACACS to link a custom list of CLI commands to an individual network administrator's login; also provides an audit trail
- **Secure Web GUI:** provides a secure, easy-to-use graphical interface for configuring the module via HTTPS
- **Multiple configuration files:** can be stored to the flash image
- **Complete session logging:** provides detailed information for problem identification and resolution
- **SNMPv1, v2c, and v3:** facilitate centralized discovery, monitoring, and secure management of networking devices
- **Remote monitoring (RMON):** uses standard SNMP to monitor essential network functions; supports events, alarm, history, and statistics group plus a private alarm extension group
- **IEEE 802.1AB Link Layer Discovery Protocol (LLDP):** automated device discovery protocol provides easy mapping of network management applications
- **sFlow (RFC 3176):** provides scalable ASIC-based wire-speed network monitoring and accounting with no impact on network performance; this allows network operators to gather a variety of sophisticated network statistics and information for capacity planning and real-time network monitoring purposes
- **Management VLAN:** segments traffic to and from management interfaces, including CLI/telnet, a Web browser interface, and SNMP
- **Remote Intelligent Mirroring:** mirrors ingress/egress ACL-selected traffic from a switch port or VLAN to a local or remote switch port anywhere on the network
- **Device Link Detection Protocol (DLDP):** monitors a cable between two switches and shuts down the ports on both ends if the cable is broken, this prevents network problems such as loops
- **IPv6 management:** provides future-proof networking because the switch is capable of being managed whether the attached network is running IPv4 or IPv6; supports pingv6, tracertv6, Telnetv6, TFTPv6, DNSv6, syslogv6, FTPv6, SNMPv6, DHCPv6, and RADIUS for IPv6
- **Troubleshooting:** ingress and egress port monitoring enable network problem solving; virtual cable tests provide visibility into cable problems

Connectivity

- **Auto-MDIX:** automatically adjusts for straight-through or crossover cables on all 10/100/1000 ports
- **Flow control:** using standard IEEE 802.3x, it provides back pressure to reduce congestion in heavy traffic situations
- **Jumbo packet support:** supports up to 9216-byte frame size to improve the performance of large data transfers
- **High-density connectivity:** provides up to 48 fixed 10/100/1000BASE-T ports in a Layer 2/Layer 3 switch
- **Optional 10 GbE ports:** through the use of optional modules, additional 10 GbE connections are available for uplinks or high-bandwidth server connections; flexibly supports XFP, SFP+, or CX4 local connections
- **IEEE 802.3at Power over Ethernet (PoE+) support:** simplifies deployment and dramatically reduces installation costs by helping to eliminate the time and cost involved in supplying local power at each access point location

- **Ethernet OAM:** provides a Layer 2 link performance and fault detection monitoring tool, which reduces failover and network convergence times
- **High-bandwidth CX4 local stacking:** when stacked using CX4 local stacking, achieves 12 Gbps per connection, allowing for up to 96 Gbps total stacking bandwidth (full duplex) in a resilient stacking configuration

Performance

- **Nonblocking architecture:** up to 192 Gbps nonblocking switching fabric provides wire-speed switching with up to 143 million pps throughput
- **Hardware-based wire-speed access control lists (ACLs):** feature-rich ACL implementation (TCAM-based) helps ensure high levels of security and ease of administration without impacting network performance

Resiliency and high availability

- **Separate data and control paths:** keeps control separated from services and keeps service processing isolated; increases security and performance
- **External redundant power supply:** provides high reliability
- **Smart link:** allows 50 ms failover between links
- **Spanning Tree/MSTP, RSTP:** provides redundant links while preventing network loops
- **Rapid Ring Protection Protocol (RRPP):** connects multiple switches in a high-performance ring using standard Ethernet technology; traffic can be rerouted around the ring in less than 50 ms, reducing the impact on traffic and applications
- **Intelligent Resilient Framework (IRF):** creates virtual resilient switching fabrics, where two or more switches perform as a single Layer 2 switch and Layer 3 router; switches do not have to be co-located and can be part of a disaster-recovery system; servers or switches can be attached using standard LACP for automatic load balancing and high availability; simplifies network operation by eliminating the complexity of Spanning Tree Protocol, Equal-Cost Multipath (ECMP), or VRRP

Layer 2 switching

- **16K MAC address table:** provides access to many Layer 2 devices
- **VLAN support and tagging:** support IEEE 802.1Q with 4,094 simultaneous VLAN IDs
- **GARP VLAN Registration Protocol:** allows automatic learning and dynamic assignment of VLANs
- **IEEE 802.1ad QinQ and Selective QinQ:** increase the scalability of an Ethernet network by providing a hierarchical structure; connect multiple LANs on a high-speed campus or metro network
- **10 GbE port aggregation:** allows grouping of ports to increase overall data throughput to a remote device
- **Internet Group Management Protocol (IGMP) and Multicast Listener Discovery (MLD) protocol snooping:** effectively control and manage the flooding of multicast packets in a Layer 2 network

Layer 3 services

- **Address Resolution Protocol (ARP):** determines the MAC address of another IP host in the same subnet; supports static ARPs; gratuitous ARP allows detection of duplicate IP addresses; proxy ARP allows normal ARP operation between subnets or when subnets are separated by a Layer 2 network
- **Dynamic Host Configuration Protocol (DHCP):** simplifies the management of large IP networks; supports client; DHCP Relay enables DHCP operation across subnets
- **Loopback interface address:** defines an address that can always be reachable, improving diagnostic capability
- **User Datagram Protocol (UDP) helper function:** allows UDP broadcasts to be directed across router interfaces to specific IP unicast or subnet broadcast addresses and prevents server spoofing for UDP services such as DHCP
- **Route maps:** provide more control during route redistribution; allow filtering and altering of route metrics

Layer 3 routing

- **Static IP routing:** provides manually configured routing for both IPv4 and IPv6 networks

Security

- **Access control lists (ACLs):** provides IP Layer 2 to Layer 4 traffic filtering; supports global ACL, VLAN ACL, port ACL, and IPv6 ACL
- **IEEE 802.1X:** industry-standard method of user authentication using an IEEE 802.1X supplicant on the client in conjunction with a RADIUS server

- **MAC-based authentication:** client is authenticated with the RADIUS server based on the client's MAC address
- **Identity-driven security and access control:**
  - **Per-user ACLs:** permits or denies user access to specific network resources based on user identity and time of day, allowing multiple types of users on the same network to access specific network services without risking network security or providing unauthorized access to sensitive data
  - **Automatic VLAN assignment:** automatically assigns users to the appropriate VLAN based on their identities
- **Secure management access:** securely encrypts all access methods (CLI, GUI, or MIB) through SSHv2, SSL, and/or SNMPv3
- **Secure FTP:** allows secure file transfer to and from the switch; protects against unwanted file downloads or unauthorized copying of a switch configuration file
- **Guest VLAN:** similar to IEEE 802.1X, it provides a browser-based environment to authenticated clients
- **Endpoint Admission Defense (EAD):** provides security policies to users accessing a network
- **Port security:** allows access only to specified MAC addresses, which can be learned or specified by the administrator
- **Port isolation:** secures and adds privacy, and prevents malicious attackers from obtaining user information
- **STP BPDU port protection:** blocks Bridge Protocol Data Units (BPDUs) on ports that do not require BPDUs, preventing forged BPDU attacks
- **STP Root Guard:** protects the root bridge from malicious attacks or configuration mistakes
- **DHCP protection:** blocks DHCP packets from unauthorized DHCP servers, preventing denial-of-service attacks
- **IP Source Guard:** helps prevent IP spoofing attacks
- **Dynamic ARP protection:** blocks ARP broadcasts from unauthorized hosts, preventing eavesdropping or theft of network data
- **RADIUS/HWTACACS:** eases switch management security administration by using a password authentication server

Convergence

- **IEEE 802.1AB Link Layer Discovery Protocol (LLDP):** is an automated device discovery protocol that provides easy mapping of network management applications
- **LLDP-MED:** is a standard extension that automatically configures network devices, including LLDP-capable IP phones
- **LLDP-CDP compatibility:** receives and recognizes CDP packets from Cisco's IP phones for seamless interoperation
- **IEEE 802.3af Power over Ethernet:** provides up to 15.4 W per port to PoE-powered devices such as IP phones, wireless access points, and video cameras
- **PoE allocations:** support multiple methods (automatic, IEEE 802.3af class, LLDP-MED, or user specified) to allocate PoE power for more efficient energy savings
- **Voice VLAN:** automatically assigns VLAN and priority for IP phones, simplifying network configuration and maintenance
- **IP multicast snooping (data-driven IGMP):** automatically prevents flooding of IP multicast traffic

Device support

- **Cisco prestandard PoE support:** detects and provides power to Cisco's prestandard PoE devices such as wireless LAN access points and IP phones

Additional information

- **Green IT and power:** use the latest advances in silicon development, shut off unused ports, and use variable-speed fans to improve energy efficiency
- **Green initiative support:** provides support for RoHS and WEEE regulations

Warranty and support

- **Lifetime warranty:** for as long as you own the product with advance replacement and next-business-day delivery (available in most countries)†
- **Electronic and telephone support:** limited electronic and telephone support is available from HP; to reach our support centers, refer to www.hp.com/networking/contact-support; for details on the duration of support provided with your product purchase, refer to www.hp.com/networking/warrantysummary

†HP warranty includes repair or replacement of hardware for as long as you own the product, with next business day advance replacement (available in most countries). The disk drive included with HP AllianceOne Advanced Services and Services zl Modules, HP Threat Management Services zl Module, HP AllianceOne Extended zl Module with Riverbed Steelhead, HP MSM765zl Mobility Controller and HP Survivable Branch Communication zl Module powered by Microsoft Lync has a five-year hardware warranty. For details, refer to the Software license and hardware warranty statements at www.hp.com/networking/warranty.

- **Software releases:** to find software for your product, refer to www.hp.com/networking/support; for details on the software releases available with your product purchase, refer to www.hp.com/networking/warrantysummary

Specifications

HP 5120-48G-PoE EI Switch with 2 slots (JE071A)

HP 5120-48G EI Switch with 2 Interface Slots (JE069A)

HP 5120-48G EI Switch (JE067A)

Ports	48 RJ-45 autosensing 10/100/1000 PoE ports (IEEE 802.3 Type 10BASE-T, IEEE 802.3u Type 100BASE-TX, IEEE 802.3ab Type 1000BASE-T, IEEE 802.3af PoE); Media Type: Auto-MDIX; Duplex: 10BASE-T/100BASE-TX: half or full; 1000BASE-T: full only 4 dual-personality ports; PoE autosensing 10/100/1000BASE-T or SFP 2 port expansion module slots 1 RJ-45 serial console port Supports a maximum of 48 autosensing 10/100/1000 ports	48 RJ-45 autosensing 10/100/1000 ports (IEEE 802.3 Type 10BASE-T, IEEE 802.3u Type 100BASE-TX, IEEE 802.3ab Type 1000BASE-T); Media Type: Auto-MDIX; Duplex: 10BASE-T/100BASE-TX: half or full; 1000BASE-T: full only 4 dual-personality ports; autosensing 10/100/1000BASE-T or SFP 2 port expansion module slots 1 RJ-45 serial console port Supports a maximum of 48 autosensing 10/100/1000 ports	48 RJ-45 autosensing 10/100/1000 ports (IEEE 802.3 Type 10BASE-T, IEEE 802.3u Type 100BASE-TX, IEEE 802.3ab Type 1000BASE-T); Media Type: Auto-MDIX; Duplex: 10BASE-T/100BASE-TX: half or full; 1000BASE-T: full only 4 dual-personality ports; autosensing 10/100/1000BASE-T or SFP 1 RJ-45 serial console port Supports a maximum of 48 autosensing 10/100/1000 ports
Physical characteristics			
	17.32(w) x 16.54(d) x 1.72(h) in (44 x 42 x 4.37 cm) (1U height)	17.32(w) x 11.81(d) x 1.72(h) in (44 x 30 x 4.36 cm) (1U height)	17.32(w) x 11.81(d) x 1.72(h) in (44 x 30 x 4.37 cm) (1U height)
Weight	16.53 lb (7.5 kg)	11.02 lb (5 kg)	11.02 lb (5 kg)
Memory and processor			
	128 MB SDRAM, 16 MB flash; packet buffer size: 4 MB	128 MB SDRAM, 16 MB flash; packet buffer size: 4 MB	128 MB SRAM, 16 MB flash; packet buffer size: 4 MB
Mounting	Mounts in an EIA-standard 19 in. telco rack or equipment cabinet (hardware included)	Mounts in an EIA-standard 19 in. telco rack or equipment cabinet (hardware included)	Mounts in an EIA-standard 19 in. telco rack or equipment cabinet (hardware included)
Performance			
1000 Mb Latency	< 3.2 µs	< 3.2 µs	< 3.2 µs
10 Gbps Latency	< 2.6 µs	< 2.6 µs	
Throughput	142.9 million pps	142.9 million pps	71.4 million pps
Routing/Switching capacity	192 Gbps	192 Gbps	96 Gbps
Routing table size	32 entries	32 entries	32 entries
Environment			
Operating temperature	32°F to 113°F (0°C to 45°C)	32°F to 113°F (0°C to 45°C)	32°F to 113°F (0°C to 45°C)
Operating relative humidity	10% to 90%, noncondensing	10% to 90%, noncondensing	10% to 90%, noncondensing
Nonoperating/Storage temperature	-40°F to 158°F (-40°C to 70°C)	-40°F to 158°F (-40°C to 70°C)	-40°F to 158°F (-40°C to 70°C)
Nonoperating/Storage relative humidity	10% to 90%, noncondensing	5% to 95%, noncondensing	5% to 95%, noncondensing
Electrical characteristics			
Maximum heat dissipation	614 BTU/hr (647.77 kJ/hr)	495 BTU/hr (522.23 kJ/hr)	375 BTU/hr (395.63 kJ/hr)
Voltage	100-240 VAC	100-240 VAC	100-240 VAC
DC voltage	-52 to -55 VDC		
Idle power	78 W	55 W	54 W
Maximum power rating	920 W	145 W	110 W
PoE power	740 W		
Frequency	50/60 Hz	50/60 Hz	50/60 Hz
Notes	Idle power is the actual power consumption of the device with no ports connected. Maximum power rating and maximum heat dissipation are the worst-case theoretical maximum numbers provided for planning the infrastructure with fully loaded PoE (if equipped), 100% traffic, all ports plugged in, and all modules populated. PoE power is the power supplied by the internal power supply. It is dependent on the type and quantity of power supplies and may be supplemented with the use of an external power supply (EPS). With AC input, the maximum power consumption is 550 W; PoE is 370 W.	Idle power is the actual power consumption of the device with no ports connected. Maximum power rating and maximum heat dissipation are the worst-case theoretical maximum numbers provided for planning the infrastructure with fully loaded PoE (if equipped), 100% traffic, all ports plugged in, and all modules populated.	Idle power is the actual power consumption of the device with no ports connected. Maximum power rating and maximum heat dissipation are the worst-case theoretical maximum numbers provided for planning the infrastructure with fully loaded PoE (if equipped), 100% traffic, all ports plugged in, and all modules populated.
Safety	UL 60950-1; EN 60825-1 Safety of Laser Products-Part 1; EN 60825-2 Safety of Laser Products-Part 2; IEC 60950-1; CAN/CSA-C22.2 No. 60950-1; Anatel; ULAR; GOST; EN 60950-1/A11; FDA 21 CFR Subchapter J; NOM; ROHS Compliance	UL 60950-1; EN 60825-1 Safety of Laser Products-Part 1; EN 60825-2 Safety of Laser Products-Part 2; IEC 60950-1; CAN/CSA-C22.2 No. 60950-1; Anatel; ULAR; GOST; EN 60950-1/A11; FDA 21 CFR Subchapter J; NOM; ROHS Compliance	UL 60950-1; EN 60825-1 Safety of Laser Products-Part 1; EN 60825-2 Safety of Laser Products-Part 2; IEC 60950-1; CAN/CSA-C22.2 No. 60950-1; Anatel; ULAR; GOST; EN 60950-1/A11; FDA 21 CFR Subchapter J; NOM; ROHS Compliance

Specifications (continued)

	HP 5120-48G-PoE EI Switch with 2 slots (JE071A)	HP 5120-48G EI Switch with 2 Interface Slots (JE069A)	HP 5120-48G EI Switch (JE067A)
Emissions	FCC part 15 Class A; VCCI Class A; EN 55022 Class A; CISPR 22 Class A; ICES-003 Class A; ANSI C63.4 2003; ETSI EN 300 386 V1.3.3; AS/NZS CISPR22 Class A; EN 61000-3-2; EN 61000-3-3; EN 61000-4-2; EN 61000-4-3; EN 61000-4-4; EN 61000-4-5; EN 61000-4-6; EN 61000-4-11; EN 61000-3-2:2006; EN 61000-3-3:1995 +A1:2001+A2:2005; EMC Directive 2004/108/EC; FCC (CFR 47, Part 15) Class A	FCC part 15 Class A; VCCI Class A; EN 55022 Class A; CISPR 22 Class A; ICES-003 Class A; ANSI C63.4 2003; ETSI EN 300 386 V1.3.3; AS/NZS CISPR22 Class A; EN 61000-3-2; EN 61000-3-3; EN 61000-4-2; EN 61000-4-3; EN 61000-4-4; EN 61000-4-5; EN 61000-4-6; EN 61000-4-11; EN 61000-3-2:2006; EN 61000-3-3:1995 +A1:2001+A2:2005; EMC Directive 2004/108/EC; FCC (CFR 47, Part 15) Class A	FCC part 15 Class A; VCCI Class A; EN 55022 Class A; CISPR 22 Class A; ICES-003 Class A; ANSI C63.4 2003; ETSI EN 300 386 V1.3.3; AS/NZS CISPR22 Class A; EN 61000-3-2; EN 61000-3-3; EN 61000-4-2; EN 61000-4-3; EN 61000-4-4; EN 61000-4-5; EN 61000-4-6; EN 61000-4-11; EN 61000-3-2:2006; EN 61000-3-3:1995 +A1:2001+A2:2005; EMC Directive 2004/108/EC; FCC (CFR 47, Part 15) Class A
Management	IMC - Intelligent Management Center; command-line interface; Web browser; SNMP Manager	IMC - Intelligent Management Center; command-line interface; Web browser; SNMP Manager	IMC - Intelligent Management Center; command-line interface; Web browser; SNMP Manager
Services	3-year, 4-hour onsite, 13x5 coverage for hardware (UV858E)	3-year, 4-hour onsite, 13x5 coverage for hardware (UV858E)	3-year, 4-hour onsite, 13x5 coverage for hardware (UV858E)
	3-year, 4-hour onsite, 24x7 coverage for hardware (UV861E)	3-year, 4-hour onsite, 24x7 coverage for hardware (UV861E)	3-year, 4-hour onsite, 24x7 coverage for hardware (UV861E)
	3-year, 4-hour onsite, 24x7 coverage for hardware, 24x7 SW phone support and SW updates (UV864E)	3-year, 4-hour onsite, 24x7 coverage for hardware, 24x7 SW phone support and SW updates (UV864E)	3-year, 4-hour onsite, 24x7 coverage for hardware, 24x7 SW phone support and SW updates (UV864E)
	3-year, 24x7 SW phone support, software updates (UV867E)	3-year, 24x7 SW phone support, software updates (UV867E)	3-year, 24x7 SW phone support, software updates (UV867E)
	1-year, post-warranty, 4-hour onsite, 13x5 coverage for hardware (HR584E)	1-year, post-warranty, 4-hour onsite, 13x5 coverage for hardware (HR584E)	1-year, post-warranty, 4-hour onsite, 13x5 coverage for hardware (HR584E)
	1-year, post-warranty, 4-hour onsite, 24x7 coverage for hardware (HR585E)	1-year, post-warranty, 4-hour onsite, 24x7 coverage for hardware (HR585E)	1-year, post-warranty, 4-hour onsite, 24x7 coverage for hardware (HR585E)
	1-year, post-warranty, 4-hour onsite, 24x7 coverage for hardware, 24x7 software phone support (HR586E)	1-year, post-warranty, 4-hour onsite, 24x7 coverage for hardware, 24x7 software phone support (HR586E)	1-year, post-warranty, 4-hour onsite, 24x7 coverage for hardware, 24x7 software phone support (HR586E)
	Installation with minimum configuration, system-based pricing (UX116E)	Installation with minimum configuration, system-based pricing (UX116E)	Installation with minimum configuration, system-based pricing (UX116E)
	Installation with HP-provided configuration, system-based pricing (UX117E)	Installation with HP-provided configuration, system-based pricing (UX117E)	Installation with HP-provided configuration, system-based pricing (UX117E)
	4-year, 4-hour onsite, 13x5 coverage for hardware (UV859E)	4-year, 4-hour onsite, 13x5 coverage for hardware (UV859E)	4-year, 4-hour onsite, 13x5 coverage for hardware (UV859E)
	4-year, 4-hour onsite, 24x7 coverage for hardware (UV862E)	4-year, 4-hour onsite, 24x7 coverage for hardware (UV862E)	4-year, 4-hour onsite, 24x7 coverage for hardware (UV862E)
	4-year, 4-hour onsite, 24x7 coverage for hardware, 24x7 software phone (UV865E)	4-year, 4-hour onsite, 24x7 coverage for hardware, 24x7 software phone (UV865E)	4-year, 4-hour onsite, 24x7 coverage for hardware, 24x7 software phone (UV865E)
	4-year, 24x7 SW phone support, software updates (UV868E)	4-year, 24x7 SW phone support, software updates (UV868E)	4-year, 24x7 SW phone support, software updates (UV868E)
	5-year, 4-hour onsite, 13x5 coverage for hardware (UV860E)	5-year, 4-hour onsite, 13x5 coverage for hardware (UV860E)	5-year, 4-hour onsite, 13x5 coverage for hardware (UV860E)
	5-year, 4-hour onsite, 24x7 coverage for hardware (UV863E)	5-year, 4-hour onsite, 24x7 coverage for hardware (UV863E)	5-year, 4-hour onsite, 24x7 coverage for hardware (UV863E)
	5-year, 4-hour onsite, 24x7 coverage for hardware, 24x7 software phone (UV866E)	5-year, 4-hour onsite, 24x7 coverage for hardware, 24x7 software phone (UV866E)	5-year, 4-hour onsite, 24x7 coverage for hardware, 24x7 software phone (UV866E)
	5-year, 24x7 SW phone support, software updates (UV869E)	5-year, 24x7 SW phone support, software updates (UV869E)	5-year, 24x7 SW phone support, software updates (UV869E)
	3 Yr 6 hr Call-to-Repair Onsite (UW963E)	3 Yr 6 hr Call-to-Repair Onsite (UW963E)	3 Yr 6 hr Call-to-Repair Onsite (UW963E)
	4 Yr 6 hr Call-to-Repair Onsite (UW964E)	4 Yr 6 hr Call-to-Repair Onsite (UW964E)	4 Yr 6 hr Call-to-Repair Onsite (UW964E)
	5 Yr 6 hr Call-to-Repair Onsite (UW965E)	5 Yr 6 hr Call-to-Repair Onsite (UW965E)	5 Yr 6 hr Call-to-Repair Onsite (UW965E)
	1-year, 6 hour Call-To-Repair Onsite for hardware (HR588E)	1-year, 6 hour Call-To-Repair Onsite for hardware (HR588E)	1-year, 6 hour Call-To-Repair Onsite for hardware (HR588E)
	1-year, 24x7 software phone support, software updates (HR587E)	1-year, 24x7 software phone support, software updates (HR587E)	1-year, 24x7 software phone support, software updates (HR587E)
	1-year, 24x7 software phone support, software updates + Next Business Day Hardware Exchange (HS682E)	1-year, 24x7 software phone support, software updates + Next Business Day Hardware Exchange (HS682E)	1-year, 24x7 software phone support, software updates + Next Business Day Hardware Exchange (HS682E)
	1-year, 24x7 software phone support, software updates + 4 hour hardware exchange (HS683E)	1-year, 24x7 software phone support, software updates + 4 hour hardware exchange (HS683E)	1-year, 24x7 software phone support, software updates + 4 hour hardware exchange (HS683E)
	4-year, 24x7 software phone support, software updates + Next Business Day Hardware Exchange (HS686E)	4-year, 24x7 software phone support, software updates + Next Business Day Hardware Exchange (HS686E)	4-year, 24x7 software phone support, software updates + Next Business Day Hardware Exchange (HS686E)
	4-year, 24x7 software phone support, software updates + 4 hour Hardware Exchange (HS687E)	4-year, 24x7 software phone support, software updates + 4 hour Hardware Exchange (HS687E)	4-year, 24x7 software phone support, software updates + 4 hour Hardware Exchange (HS687E)

Specifications (continued)

	HP 5120-48G-PoE EI Switch with 2 slots (JE071A)	HP 5120-48G EI Switch with 2 Interface Slots (JE069A)	HP 5120-48G EI Switch (JE067A)
	5-year, 24x7 software phone support, software updates + Next Business Day Hardware Exchange (HS688E) Refer to the HP website at www.hp.com/networking/services for details on the service-level descriptions and product numbers. For details about services and response times in your area, please contact your local HP sales office.	5-year, 24x7 software phone support, software updates + Next Business Day Hardware Exchange (HS688E) Refer to the HP website at www.hp.com/networking/services for details on the service-level descriptions and product numbers. For details about services and response times in your area, please contact your local HP sales office.	5-year, 24x7 software phone support, software updates + Next Business Day Hardware Exchange (HS688E) Refer to the HP website at www.hp.com/networking/services for details on the service-level descriptions and product numbers. For details about services and response times in your area, please contact your local HP sales office.
Standards and protocols (applies to all products in series)	**Device management** RFC 1157 SNMPv1/v2c RFC 1305 NTPv3 RFC 2573 (SNMPv3 Applications) RFC 2819 (RMON groups Alarm, Event, History and Statistics only) RFC 3416 (SNMP Protocol Operations v2) HTML and telnet management Multiple Configuration Files SNMP v3 and RMON RFC support SSHv1/SSHv2 Secure Shell TACACS/TACACS+ Web UI **General protocols** IEEE 802.1ad Q-in-Q IEEE 802.1D MAC Bridges IEEE 802.1p Priority IEEE 802.1Q VLANs IEEE 802.1s Multiple Spanning Trees IEEE 802.1w Rapid Reconfiguration of Spanning Tree IEEE 802.1X PAE IEEE 802.3 Type 10BASE-T IEEE 802.3ab 1000BASE-T IEEE 802.3ad Link Aggregation Control Protocol (LACP) IEEE 802.3ae 10-Gigabit Ethernet IEEE 802.3af Power over Ethernet IEEE 802.3i 10BASE-T IEEE 802.3u 100BASE-X IEEE 802.3x Flow Control IEEE 802.3z 1000BASE-X RFC 768 UDP RFC 783 TFTP Protocol (revision 2) RFC 791 IP RFC 792 ICMP RFC 793 TCP RFC 826 ARP RFC 854 TELNET RFC 951 BOOTP RFC 1213 Management Information Base for Network Management of TCP/IP-based internets RFC 1305 NTPv3 RFC 1350 TFTP Protocol (revision 2) RFC 1519 CIDR	RFC 1812 IPv4 Routing RFC 1866 Hypertext Markup Language - 2.0 RFC 2131 DHCP RFC 2236 IGMP Snooping RFC 2616 HTTP Compatibility v1.1 RFC 2665 Definitions of Managed Objects for the Ethernet-like Interface Types RFC 2668 Definitions of Managed Objects for IEEE 802.3 Medium Attachment Units (MAUs) RFC 2865 Remote Authentication Dial In User Service (RADIUS) RFC 2866 RADIUS Accounting RFC 3414 User-based Security Model (USM) for version 3 of the Simple Network Management Protocol (SNMPv3) RFC 3415 View-based Access Control Model (VACM) for the Simple Network Management Protocol (SNMP) RFC 3418 Management Information Base (MIB) for the Simple Network Management Protocol (SNMP) RFC 3576 Ext to RADIUS (CoA only) RFC 4213 Basic IPv6 Transition Mechanisms 802.1r - GARP Proprietary Attribute Registration Protocol (GPRP) **IPv6** RFC 2461 IPv6 Neighbor Discovery RFC 2463 ICMPv6 RFC 3162 RADIUS and IPv6 RFC 3306 Unicast-Prefix-based IPv6 Multicast Addresses RFC 3315 DHCPv6 (client and relay) **MIBs** RFC 1212 Concise MIB Definitions RFC 1213 MIB II RFC 1493 Bridge MIB RFC 1757 Remote Network Monitoring MIB RFC 2096 IP Forwarding Table MIB RFC 2233 Interface MIB RFC 2571 SNMP Framework MIB RFC 2572 SNMP-MPD MIB RFC 2573 SNMP-Notification MIB RFC 2573 SNMP-Target MIB RFC 2574 SNMP USM MIB	RFC 2618 RADIUS Authentication Client MIB RFC 2620 RADIUS Accounting Client MIB RFC 2665 Ethernet-Like-MIB RFC 2668 802.3 MAU MIB RFC 2674 802.1p and IEEE 802.1Q Bridge MIB RFC 2737 Entity MIB (Version 2) RFC 2819 RMON MIB RFC 2863 The Interfaces Group MIB RFC 2925 Ping MIB RFC 3414 SNMP-User based-SM MIB RFC 3415 SNMP-View based-ACM MIB RFC 3418 MIB for SNMPv3 RFC 3621 Power Ethernet MIB **Network management** IEEE 802.1AB Link Layer Discovery Protocol (LLDP) RFC 2819 Four groups of RMON: 1 (statistics), 2 (history), 3 (alarm) and 9 (events) ANSI/TIA-1057 LLDP Media Endpoint Discovery (LLDP-MED) SNMPv1/v2c/v3 **Security** IEEE 802.1X Port Based Network Access Control RFC 1492 TACACS+ RFC 2865 RADIUS (client only) RFC 2866 RADIUS Accounting Secure Sockets Layer (SSL) SSHv2 Secure Shell

Specifications (continued)

	HP 5120-24G-PoE EI Switch with 2 slots (JE070A)	HP 5120-24G EI Switch with 2 Interface Slots (JE068A)	HP 5120-24G EI Switch (JE066A)
Ports	24 RJ-45 autosensing 10/100/1000 PoE ports (IEEE 802.3 Type 10BASE-T, IEEE 802.3u Type 100BASE-TX, IEEE 802.3ab Type 1000BASE-T, IEEE 802.3af PoE); Duplex: 10BASE-T/100BASE-TX: half or full; 1000BASE-T: full only 4 dual-personality ports; PoE autosensing 10/100/1000BASE-T or SPF 2 port expansion module slots 1 RJ-45 serial console port	24 RJ-45 autosensing 10/100/1000 ports (IEEE 802.3 Type 10BASE-T, IEEE 802.3u Type 100BASE-TX, IEEE 802.3ab Type 1000BASE-T); Duplex: 10BASE-T/100BASE-TX: half or full; 1000BASE-T: full only 4 dual-personality ports; autosensing 10/100/1000BASE-T or SFP 2 port expansion module slots 1 RJ-45 serial console port	24 RJ-45 autosensing 10/100/1000 ports (IEEE 802.3 Type 10BASE-T, IEEE 802.3u Type 100BASE-TX, IEEE 802.3ab Type 1000BASE-T); Duplex: 10BASE-T/100BASE-TX: half or full; 1000BASE-T: full only 4 dual-personality ports; autosensing 10/100/1000BASE-T or SFP 1 RJ-45 serial console port
Physical characteristics			
	17.32(w) x 16.54(d) x 1.72(h) in (44 x 42 x 4.37 cm) (1U height)	17.32(w) x 11.81(d) x 1.72(h) in (44 x 30 x 4.37 cm) (1U height)	17.32(w) x 11.81(d) x 1.72(h) in (44 x 30 x 4.36 cm) (1U height)
Weight	15.43 lb (7 kg)	9.92 lb (4.5 kg)	9.92 lb (4.5 kg)
Memory and processor			
	128 MB SDRAM, 16 MB flash; packet buffer size: 2 MB	128 MB SDRAM, 16 MB flash; packet buffer size: 2 MB	128 MB SDRAM, 16 MB flash; packet buffer size: 2 MB
Mounting	Mounts in an EIA-standard 19 in. telco rack or equipment cabinet (hardware included)	Mounts in an EIA-standard 19 in. telco rack or equipment cabinet (hardware included)	Mounts in an EIA-standard 19 in. telco rack or equipment cabinet (hardware included)
Performance			
1000 Mb Latency	< 3.2 μs	< 3.2 μs	< 3.2 μs
10 Gbps Latency	< 2.6 μs	< 2.6 μs	
Throughput	107.2 million pps	107.2 million pps	35.7 million pps
Routing/Switching capacity	144 Gbps	144 Gbps	48 Gbps
Routing table size	32 entries	32 entries	32 entries
Environment			
Operating temperature	32°F to 113°F (0°C to 45°C)	32°F to 113°F (0°C to 45°C)	32°F to 113°F (0°C to 45°C)
Operating relative humidity	10% to 90%, noncondensing	10% to 90%, noncondensing	10% to 90%, noncondensing
Nonoperating/Storage temperature	-40°F to 158°F (-40°C to 70°C)	-40°F to 158°F (-40°C to 70°C)	-40°F to 158°F (-40°C to 70°C)
Nonoperating/Storage relative humidity	5% to 95%, noncondensing	5% to 95%, noncondensing	5% to 95%, noncondensing
Electrical characteristics			
Maximum heat dissipation	425 BTU/hr (448.38 kJ/hr)	362 BTU/hr (381.91 kJ/hr)	212 BTU/hr (223.66 kJ/hr)
Voltage	100-240 VAC	100-240 VAC	100-240 VAC
DC voltage	-52 to -55 VDC		
Idle power	55 W	36 W	35 W
Maximum power rating	495 W	106 W	62 W
PoE power	370 W		
Frequency	50/60 Hz	50/60 Hz	50/60 Hz
Notes	Idle power is the actual power consumption of the device with no ports connected. Maximum power rating and maximum heat dissipation are the worst-case theoretical maximum numbers provided for planning the infrastructure with fully loaded PoE (if equipped), 100% traffic, all ports plugged in, and all modules populated. PoE power is the power supplied by the internal power supply. It is dependent on the type and quantity of power supplies and may be supplemented with the use of an external power supply (EPS).	Idle power is the actual power consumption of the device with no ports connected. Maximum power rating and maximum heat dissipation are the worst-case theoretical maximum numbers provided for planning the infrastructure with fully loaded PoE (if equipped), 100% traffic, all ports plugged in, and all modules populated.	Idle power is the actual power consumption of the device with no ports connected. Maximum power rating and maximum heat dissipation are the worst-case theoretical maximum numbers provided for planning the infrastructure with fully loaded PoE (if equipped), 100% traffic, all ports plugged in, and all modules populated.
Safety	UL 60950-1; EN 60825-1 Safety of Laser Products-Part 1; EN 60825-2 Safety of Laser Products-Part 2; IEC 60950-1; CAN/CSA-C22.2 No. 60950-1; Anatel; ULAR; GOST; EN 60950-1/A11; FDA 21 CFR Subchapter J; NOM; ROHS Compliance	UL 60950-1; EN 60825-1 Safety of Laser Products-Part 1; EN 60825-2 Safety of Laser Products-Part 2; IEC 60950-1; CAN/CSA-C22.2 No. 60950-1; Anatel; ULAR; GOST; EN 60950-1/A11; FDA 21 CFR Subchapter J; NOM; ROHS Compliance	UL 60950-1; EN 60825-1 Safety of Laser Products-Part 1; EN 60825-2 Safety of Laser Products-Part 2; IEC 60950-1; CAN/CSA-C22.2 No. 60950-1; Anatel; ULAR; GOST; EN 60950-1/A11; FDA 21 CFR Subchapter J; NOM; ROHS Compliance

Specifications (continued)

	HP 5120-24G-PoE EI Switch with 2 slots (JE070A)	HP 5120-24G EI Switch with 2 Interface Slots (JE068A)	HP 5120-24G EI Switch (JE066A)
Emissions	FCC part 15 Class A; VCCI Class A; EN 55022 Class A; CISPR 22 Class A; ICES-003 Class A; ANSI C63.4 2003; ETSI EN 300 386 V1.3.3; AS/NZS CISPR22 Class A; EN 61000-3-2; EN 61000-3-3; EN 61000-4-2; EN 61000-4-3; EN 61000-4-4; EN 61000-4-5; EN 61000-4-6; EN 61000-4-11; EN 61000-3-2:2006; EN 61000-3-3:1995 +A1:2001+A2:2005; EMC Directive 2004/108/EC; FCC (CFR 47, Part 15) Class A	FCC part 15 Class A; VCCI Class A; EN 55022 Class A; CISPR 22 Class A; ICES-003 Class A; ANSI C63.4 2003; ETSI EN 300 386 V1.3.3; AS/NZS CISPR22 Class A; EN 61000-3-2; EN 61000-3-3; EN 61000-4-2; EN 61000-4-3; EN 61000-4-4; EN 61000-4-5; EN 61000-4-6; EN 61000-4-11; EN 61000-3-2:2006; EN 61000-3-3:1995 +A1:2001+A2:2005; EMC Directive 2004/108/EC; FCC (CFR 47, Part 15) Class A	FCC part 15 Class A; VCCI Class A; EN 55022 Class A; CISPR 22 Class A; ICES-003 Class A; ANSI C63.4 2003; ETSI EN 300 386 V1.3.3; AS/NZS CISPR22 Class A; EN 61000-3-2; EN 61000-3-3; EN 61000-4-2; EN 61000-4-3; EN 61000-4-4; EN 61000-4-5; EN 61000-4-6; EN 61000-4-11; EN 61000-3-2:2006; EN 61000-3-3:1995 +A1:2001+A2:2005; EMC Directive 2004/108/EC; FCC (CFR 47, Part 15) Class A
Management	IMC - Intelligent Management Center; command-line interface; Web browser; SNMP Manager	IMC - Intelligent Management Center; command-line interface; Web browser; SNMP Manager	IMC - Intelligent Management Center; command-line interface; Web browser; SNMP Manager
Services	3-year, 4-hour onsite, 13x5 coverage for hardware (UV858E)	3-year, 4-hour onsite, 13x5 coverage for hardware (UV858E)	3-year, 4-hour onsite, 13x5 coverage for hardware (UV858E)
	3-year, 4-hour onsite, 24x7 coverage for hardware (UV861E)	3-year, 4-hour onsite, 24x7 coverage for hardware (UV861E)	3-year, 4-hour onsite, 24x7 coverage for hardware (UV861E)
	3-year, 4-hour onsite, 24x7 coverage for hardware, 24x7 SW phone support and SW updates (UV864E)	3-year, 4-hour onsite, 24x7 coverage for hardware, 24x7 SW phone support and SW updates (UV864E)	3-year, 4-hour onsite, 24x7 coverage for hardware, 24x7 SW phone support and SW updates (UV864E)
	3-year, 24x7 SW phone support, software updates (UV867E)	3-year, 24x7 SW phone support, software updates (UV867E)	3-year, 24x7 SW phone support, software updates (UV867E)
	1-year, post-warranty, 4-hour onsite, 13x5 coverage for hardware (HR584E)	1-year, post-warranty, 4-hour onsite, 13x5 coverage for hardware (HR584E)	1-year, post-warranty, 4-hour onsite, 13x5 coverage for hardware (HR584E)
	1-year, post-warranty, 4-hour onsite, 24x7 coverage for hardware (HR585E)	1-year, post-warranty, 4-hour onsite, 24x7 coverage for hardware (HR585E)	1-year, post-warranty, 4-hour onsite, 24x7 coverage for hardware (HR585E)
	1-year, post-warranty, 4-hour onsite, 24x7 coverage for hardware, 24x7 software phone support (HR586E)	1-year, post-warranty, 4-hour onsite, 24x7 coverage for hardware, 24x7 software phone support (HR586E)	1-year, post-warranty, 4-hour onsite, 24x7 coverage for hardware, 24x7 software phone support (HR586E)
	Installation with minimum configuration, system-based pricing (UX116E)	Installation with minimum configuration, system-based pricing (UX116E)	1-year, post-warranty, 4-hour onsite, 24x7 coverage for hardware, 24x7 software phone support (HR670E)
	Installation with HP-provided configuration, system-based pricing (UX117E)	Installation with HP-provided configuration, system-based pricing (UX117E)	Installation with minimum configuration, system-based pricing (UX116E)
	4-year, 4-hour onsite, 13x5 coverage for hardware (UV859E)	4-year, 4-hour onsite, 13x5 coverage for hardware (UV859E)	Installation with HP-provided configuration, system-based pricing (UX117E)
	4-year, 4-hour onsite, 24x7 coverage for hardware (UV862E)	4-year, 4-hour onsite, 24x7 coverage for hardware (UV862E)	4-year, 4-hour onsite, 13x5 coverage for hardware (UV859E)
	4-year, 4-hour onsite, 24x7 coverage for hardware, 24x7 software phone (UV865E)	4-year, 4-hour onsite, 24x7 coverage for hardware, 24x7 software phone (UV865E)	4-year, 4-hour onsite, 24x7 coverage for hardware (UV862E)
	4-year, 24x7 SW phone support, software updates (UV868E)	4-year, 24x7 SW phone support, software updates (UV868E)	4-year, 4-hour onsite, 24x7 coverage for hardware, 24x7 software phone (UV865E)
	5-year, 4-hour onsite, 13x5 coverage for hardware (UV860E)	5-year, 4-hour onsite, 13x5 coverage for hardware (UV860E)	4-year, 24x7 SW phone support, software updates (UV868E)
	5-year, 4-hour onsite, 24x7 coverage for hardware (UV863E)	5-year, 4-hour onsite, 24x7 coverage for hardware (UV863E)	5-year, 4-hour onsite, 13x5 coverage for hardware (UV860E)
	5-year, 4-hour onsite, 24x7 coverage for hardware, 24x7 software phone (UV866E)	5-year, 4-hour onsite, 24x7 coverage for hardware, 24x7 software phone (UV866E)	5-year, 4-hour onsite, 24x7 coverage for hardware (UV863E)
	5-year, 24x7 SW phone support, software updates (UV869E)	5-year, 24x7 SW phone support, software updates (UV869E)	5-year, 4-hour onsite, 24x7 coverage for hardware, 24x7 software phone (UV866E)
	3 Yr 6 hr Call-to-Repair Onsite (UW963E)	3 Yr 6 hr Call-to-Repair Onsite (UW963E)	5-year, 24x7 SW phone support, software updates (UV869E)
	4 Yr 6 hr Call-to-Repair Onsite (UW964E)	4 Yr 6 hr Call-to-Repair Onsite (UW964E)	3 Yr 6 hr Call-to-Repair Onsite (UW963E)
	5 Yr 6 hr Call-to-Repair Onsite (UW965E)	5 Yr 6 hr Call-to-Repair Onsite (UW965E)	4 Yr 6 hr Call-to-Repair Onsite (UW964E)
	1-year, 6 hour Call-To-Repair Onsite for hardware (HR588E)	1-year, 6 hour Call-To-Repair Onsite for hardware (HR588E)	5 Yr 6 hr Call-to-Repair Onsite (UW965E)
	1-year, 24x7 software phone support, software updates (HR587E)	1-year, 24x7 software phone support, software updates (HR587E)	1-year, 6 hour Call-To-Repair Onsite for hardware (HR588E)
	1-year, 24x7 software phone support, software updates + Next Business Day Hardware Exchange (HS682E)	1-year, 24x7 software phone support, software updates + Next Business Day Hardware Exchange (HS682E)	1-year, 24x7 software phone support, software updates (HR587E)
	1-year, 24x7 software phone support, software updates + 4 hour hardware exchange (HS683E)	1-year, 24x7 software phone support, software updates + 4 hour hardware exchange (HS683E)	1-year, 24x7 software phone support, software updates + Next Business Day Hardware Exchange (HS682E)
	4-year, 24x7 software phone support, software updates + Next Business Day Hardware Exchange (HS686E)	4-year, 24x7 software phone support, software updates + Next Business Day Hardware Exchange (HS686E)	1-year, 24x7 software phone support, software updates + 4 hour hardware exchange (HS683E)

Specifications (continued)

	HP 5120-24G-PoE EI Switch with 2 slots (JE070A)	HP 5120-24G EI Switch with 2 Interface Slots (JE068A)	HP 5120-24G EI Switch (JE066A)
	4-year, 24x7 software phone support, software updates + 4 hour Hardware Exchange (HS687E)	4-year, 24x7 software phone support, software updates + 4 hour Hardware Exchange (HS687E)	4-year, 24x7 software phone support, software updates + Next Business Day Hardware Exchange (HS686E)
	5-year, 24x7 software phone support, software updates + Next Business Day Hardware Exchange (HS688E)	5-year, 24x7 software phone support, software updates + Next Business Day Hardware Exchange (HS688E)	4-year, 24x7 software phone support, software updates + 4 hour Hardware Exchange (HS687E)
	Refer to the HP website at www.hp.com/networking/services for details on the service-level descriptions and product numbers. For details about services and response times in your area, please contact your local HP sales office.	Refer to the HP website at www.hp.com/networking/services for details on the service-level descriptions and product numbers. For details about services and response times in your area, please contact your local HP sales office.	5-year, 24x7 software phone support, software updates + Next Business Day Hardware Exchange (HS688E)
			Refer to the HP website at www.hp.com/networking/services for details on the service-level descriptions and product numbers. For details about services and response times in your area, please contact your local HP sales office.
Standards and protocols (applies to all products in series)	**Device management** RFC 1157 SNMPv1/v2c RFC 1305 NTPv3 RFC 2573 (SNMPv3 Applications) RFC 2819 (RMON groups Alarm, Event, History and Statistics only) RFC 3416 (SNMP Protocol Operations v2) HTML and telnet management Multiple Configuration Files SNMP v3 and RMON RFC support SSHv1/SSHv2 Secure Shell TACACS/TACACS+ Web UI **General protocols** IEEE 802.1ad Q-in-Q IEEE 802.1D MAC Bridges IEEE 802.1p Priority IEEE 802.1Q VLANs IEEE 802.1s Multiple Spanning Trees IEEE 802.1w Rapid Reconfiguration of Spanning Tree IEEE 802.1X PAE IEEE 802.3 Type 10BASE-T IEEE 802.3ab 1000BASE-T IEEE 802.3ad Link Aggregation Control Protocol (LACP) IEEE 802.3ae 10-Gigabit Ethernet IEEE 802.3af Power over Ethernet IEEE 802.3i 10BASE-T IEEE 802.3u 100BASE-X IEEE 802.3x Flow Control IEEE 802.3z 1000BASE-X RFC 768 UDP RFC 783 TFTP Protocol (revision 2) RFC 791 IP RFC 792 ICMP RFC 793 TCP RFC 826 ARP RFC 854 TELNET RFC 951 BOOTP RFC 1213 Management Information Base for Network Management of TCP/IP-based internets RFC 1305 NTPv3 RFC 1350 TFTP Protocol (revision 2) RFC 1519 CIDR	RFC 1812 IPv4 Routing RFC 1866 Hypertext Markup Language - 2.0 RFC 2131 DHCP RFC 2236 IGMP Snooping RFC 2616 HTTP Compatibility v1.1 RFC 2665 Definitions of Managed Objects for the Ethernet-like Interface Types RFC 2668 Definitions of Managed Objects for IEEE 802.3 Medium Attachment Units (MAUs) RFC 2865 Remote Authentication Dial In User Service (RADIUS) RFC 2866 RADIUS Accounting RFC 3414 User-based Security Model (USM) for version 3 of the Simple Network Management Protocol (SNMPv3) RFC 3415 View-based Access Control Model (VACM) for the Simple Network Management Protocol (SNMP) RFC 3418 Management Information Base (MIB) for the Simple Network Management Protocol (SNMP) RFC 3576 Ext to RADIUS (CoA only) RFC 4213 Basic IPv6 Transition Mechanisms 802.1r - GARP Proprietary Attribute Registration Protocol (GPRP) **IPv6** RFC 2461 IPv6 Neighbor Discovery RFC 2463 ICMPv6 RFC 3162 RADIUS and IPv6 RFC 3306 Unicast-Prefix-based IPv6 Multicast Addresses RFC 3315 DHCPv6 (client and relay) **MIBs** RFC 1212 Concise MIB Definitions RFC 1213 MIB II RFC 1493 Bridge MIB RFC 1757 Remote Network Monitoring MIB RFC 2096 IP Forwarding Table MIB RFC 2233 Interface MIB RFC 2571 SNMP Framework MIB RFC 2572 SNMP-MPD MIB RFC 2573 SNMP-Notification MIB RFC 2573 SNMP-Target MIB RFC 2574 SNMP USM MIB	RFC 2618 RADIUS Authentication Client MIB RFC 2620 RADIUS Accounting Client MIB RFC 2665 Ethernet-Like-MIB RFC 2668 802.3 MAU MIB RFC 2674 802.1p and IEEE 802.1Q Bridge MIB RFC 2737 Entity MIB (Version 2) RFC 2819 RMON MIB RFC 2863 The Interfaces Group MIB RFC 2925 Ping MIB RFC 3414 SNMP-User based-SM MIB RFC 3415 SNMP-View based-ACM MIB RFC 3418 MIB for SNMPv3 RFC 3621 Power Ethernet MIB **Network management** IEEE 802.1AB Link Layer Discovery Protocol (LLDP) RFC 2819 Four groups of RMON: 1 (statistics), 2 (history), 3 (alarm) and 9 (events) ANSI/TIA-1057 LLDP Media Endpoint Discovery (LLDP-MED) SNMPv1/v2c/v3 **Security** IEEE 802.1X Port Based Network Access Control RFC 1492 TACACS+ RFC 2865 RADIUS (client only) RFC 2866 RADIUS Accounting Secure Sockets Layer (SSL) SSHv2 Secure Shell

Specifications (continued)

	HP 5120-48G-PoE+ EI Switch with 2 Interface Slots (JG237A)	HP 5120-24G-PoE+ EI Switch with 2 Interface Slots (JG236A)
Ports	48 RJ-45 autosensing 10/100/1000 PoE+ ports (IEEE 802.3 Type 10BASE-T, IEEE 802.3u Type 100BASE-TX, IEEE 802.3ab Type 1000BASE-T, IEEE 802.3at PoE+); Media Type: Auto-MDIX; Duplex: 10BASE-T/100BASE-TX: half or full; 1000BASE-T: full only 4 dual-personality ports; PoE autosensing 10/100/1000BASE-T or SFP 2 port expansion module slots 1 RJ-45 serial console port Supports a maximum of 48 autosensing 10/100/1000 ports	24 RJ-45 autosensing 10/100/1000 PoE+ ports (IEEE 802.3 Type 10BASE-T, IEEE 802.3u Type 100BASE-TX, IEEE 802.3ab Type 1000BASE-T, IEEE 802.3at PoE+); Duplex: 10BASE-T/100BASE-TX: half or full; 1000BASE-T: full only 4 dual-personality ports; PoE autosensing 10/100/1000BASE-T or SPF 2 port expansion module slots 1 RJ-45 serial console port
Physical characteristics		
	17.32(w) x 16.54(d) x 1.72(h) in (43.99 x 42.01 x 4.37 cm) (1U height)	17.32(w) x 16.54(d) x 1.72(h) in (43.99 x 42.01 x 4.37 cm) (1U height)
Weight	16.53 lb (7.5 kg)	15.43 lb (7 kg)
Memory and processor		
	128 MB SDRAM, 16 MB flash; packet buffer size: 4 MB	128 MB SDRAM, 16 MB flash; packet buffer size: 2 MB
Mounting	Mounts in an EIA-standard 19 in. telco rack or equipment cabinet (hardware included)	Mounts in an EIA-standard 19 in. telco rack or equipment cabinet (hardware included)
Performance		
1000 Mb Latency	< 3.2 µs	< 3.2 µs
10 Gbps Latency	< 2.6 µs	< 2.6 µs
Throughput	142.9 million pps	107.2 million pps
Routing/Switching capacity	192 Gbps	144 Gbps
Routing table size	32 entries	32 entries
Environment		
Operating temperature	32°F to 113°F (0°C to 45°C)	32°F to 113°F (0°C to 45°C)
Operating relative humidity	10% to 90%, noncondensing	10% to 90%, noncondensing
Nonoperating/Storage temperature	-40°F to 158°F (-40°C to 70°C)	-40°F to 158°F (-40°C to 70°C)
Nonoperating/Storage relative humidity	10% to 90%, noncondensing	5% to 95%, noncondensing
Electrical characteristics		
Maximum heat dissipation	614 BTU/hr (647.77 kJ/hr)	425 BTU/hr (448.38 kJ/hr)
Voltage	100-240 VAC	100-240 VAC
DC voltage	-52 to -55 VDC	-52 to -55 VDC
Idle power	78 W	55 W
Maximum power rating	920 W	495 W
PoE power	740 W	370 W
Frequency	50/60 Hz	50/60 Hz
Notes	Idle power is the actual power consumption of the device with no ports connected. Maximum power rating and maximum heat dissipation are the worst-case theoretical maximum numbers provided for planning the infrastructure with fully loaded PoE (if equipped), 100% traffic, all ports plugged in, and all modules populated. PoE power is the power supplied by the internal power supply. It is dependent on the type and quantity of power supplies and may be supplemented with the use of an external power supply (EPS). With AC input, the maximum power consumption is 550 W; PoE is 370 W.	Idle power is the actual power consumption of the device with no ports connected. Maximum power rating and maximum heat dissipation are the worst-case theoretical maximum numbers provided for planning the infrastructure with fully loaded PoE (if equipped), 100% traffic, all ports plugged in, and all modules populated. PoE power is the power supplied by the internal power supply. It is dependent on the type and quantity of power supplies and may be supplemented with the use of an external power supply (EPS).
Safety	UL 60950-1; EN 60825-1 Safety of Laser Products-Part 1; EN 60825-2 Safety of Laser Products-Part 2; IEC 60950-1; CAN/CSA-C22.2 No. 60950-1; Anatel; ULAR; GOST; EN 60950-1/A11; FDA 21 CFR Subchapter J; NOM; ROHS Compliance	UL 60950-1; EN 60825-1 Safety of Laser Products-Part 1; EN 60825-2 Safety of Laser Products-Part 2; IEC 60950-1; CAN/CSA-C22.2 No. 60950-1; Anatel; ULAR; GOST; EN 60950-1/A11; FDA 21 CFR Subchapter J; NOM; ROHS Compliance
Emissions	FCC part 15 Class A; VCCI Class A; EN 55022 Class A; CISPR 22 Class A; ICES-003 Class A; ANSI C63.4 2003; ETSI EN 300 386 V1.3.3; AS/NZS CISPR22 Class A; EN 61000-3-2; EN 61000-3-3; EN 61000-4-2; EN 61000-4-3; EN 61000-4-4; EN 61000-4-5; EN 61000-4-6; EN 61000-4-11; EN 61000-3-2:2006; EN 61000-3-3:1995 +A1:2001+A2:2005; EMC Directive 2004/108/EC; FCC (CFR 47, Part 15) Class A	FCC part 15 Class A; VCCI Class A; EN 55022 Class A; CISPR 22 Class A; ICES-003 Class A; ANSI C63.4 2003; ETSI EN 300 386 V1.3.3; AS/NZS CISPR22 Class A; EN 61000-3-2; EN 61000-3-3; EN 61000-4-2; EN 61000-4-3; EN 61000-4-4; EN 61000-4-5; EN 61000-4-6; EN 61000-4-11; EN 61000-3-2:2006; EN 61000-3-3:1995 +A1:2001+A2:2005; EMC Directive 2004/108/EC; FCC (CFR 47, Part 15) Class A
Management	IMC - Intelligent Management Center; command-line interface; Web browser; SNMP Manager	IMC - Intelligent Management Center; command-line interface; Web browser; SNMP Manager
Services	3-year, 4-hour onsite, 13x5 coverage for hardware (UV858E) 3-year, 4-hour onsite, 24x7 coverage for hardware (UV861E) 3-year, 4-hour onsite, 24x7 coverage for hardware, 24x7 SW phone support and SW updates (UV864E)	3-year, 4-hour onsite, 13x5 coverage for hardware (UV858E) 3-year, 4-hour onsite, 24x7 coverage for hardware (UV861E) 3-year, 4-hour onsite, 24x7 coverage for hardware, 24x7 SW phone support and SW updates (UV864E)

Specifications (continued)

	HP 5120-48G-PoE+ EI Switch with 2 Interface Slots (JG237A)	HP 5120-24G-PoE+ EI Switch with 2 Interface Slots (JG236A)
	3-year, 24x7 SW phone support, software updates (UV867E)	3-year, 24x7 SW phone support, software updates (UV867E)
	Installation with minimum configuration, system-based pricing (UX116E)	Installation with minimum configuration, system-based pricing (UX116E)
	Installation with HP-provided configuration, system-based pricing (UX117E)	Installation with HP-provided configuration, system-based pricing (UX117E)
	4-year, 4-hour onsite, 13x5 coverage for hardware (UV859E)	4-year, 4-hour onsite, 13x5 coverage for hardware (UV859E)
	4-year, 4-hour onsite, 24x7 coverage for hardware (UV862E)	4-year, 4-hour onsite, 24x7 coverage for hardware (UV862E)
	4-year, 4-hour onsite, 24x7 coverage for hardware, 24x7 software phone (UV865E)	4-year, 4-hour onsite, 24x7 coverage for hardware, 24x7 software phone (UV865E)
	4-year, 24x7 SW phone support, software updates (UV868E)	4-year, 24x7 SW phone support, software updates (UV868E)
	5-year, 4-hour onsite, 13x5 coverage for hardware (UV860E)	5-year, 4-hour onsite, 13x5 coverage for hardware (UV860E)
	5-year, 4-hour onsite, 24x7 coverage for hardware (UV863E)	5-year, 4-hour onsite, 24x7 coverage for hardware (UV863E)
	5-year, 4-hour onsite, 24x7 coverage for hardware, 24x7 software phone (UV866E)	5-year, 4-hour onsite, 24x7 coverage for hardware, 24x7 software phone (UV866E)
	5-year, 24x7 SW phone support, software updates (UV869E)	5-year, 24x7 SW phone support, software updates (UV869E)
	3 Yr 6 hr Call-to-Repair Onsite (UW963E)	3 Yr 6 hr Call-to-Repair Onsite (UW963E)
	4 Yr 6 hr Call-to-Repair Onsite (UW964E)	4 Yr 6 hr Call-to-Repair Onsite (UW964E)
	5 Yr 6 hr Call-to-Repair Onsite (UW965E)	5 Yr 6 hr Call-to-Repair Onsite (UW965E)
	Refer to the HP website at www.hp.com/networking/services for details on the service-level descriptions and product numbers. For details about services and response times in your area, please contact your local HP sales office.	Refer to the HP website at www.hp.com/networking/services for details on the service-level descriptions and product numbers. For details about services and response times in your area, please contact your local HP sales office.

Standards and protocols
(applies to all products in series)

Device management
RFC 1157 SNMPv1/v2c
RFC 1305 NTPv3
RFC 2573 (SNMPv3 Applications)
RFC 2819 (RMON groups Alarm, Event, History and Statistics only)
RFC 3416 (SNMP Protocol Operations v2)
HTML and telnet management
Multiple Configuration Files
SNMP v3 and RMON RFC support
SSHv1/SSHv2 Secure Shell
TACACS/TACACS+
Web UI

General protocols
IEEE 802.1ad Q-in-Q
IEEE 802.1D MAC Bridges
IEEE 802.1p Priority
IEEE 802.1Q VLANs
IEEE 802.1s Multiple Spanning Trees
IEEE 802.1w Rapid Reconfiguration of Spanning Tree
IEEE 802.1X PAE
IEEE 802.3 Type 10BASE-T
IEEE 802.3ab 1000BASE-T
IEEE 802.3ad Link Aggregation Control Protocol (LACP)
IEEE 802.3ae 10-Gigabit Ethernet
IEEE 802.3af Power over Ethernet
IEEE 802.3i 10BASE-T
IEEE 802.3u 100BASE-X
IEEE 802.3x Flow Control
IEEE 802.3z 1000BASE-X
RFC 768 UDP
RFC 783 TFTP Protocol (revision 2)
RFC 791 IP
RFC 792 ICMP
RFC 793 TCP
RFC 826 ARP
RFC 854 TELNET
RFC 951 BOOTP
RFC 1213 Management Information Base for Network Management of TCP/IP-based internets
RFC 1305 NTPv3
RFC 1350 TFTP Protocol (revision 2)
RFC 1519 CIDR
RFC 1812 IPv4 Routing
RFC 1866 Hypertext Markup Language - 2.0
RFC 2131 DHCP
RFC 2236 IGMP Snooping
RFC 2616 HTTP Compatibility v1.1
RFC 2665 Definitions of Managed Objects for the Ethernet-like Interface Types
RFC 2668 Definitions of Managed Objects for IEEE 802.3 Medium Attachment Units (MAUs)
RFC 2865 Remote Authentication Dial In User Service (RADIUS)
RFC 2866 RADIUS Accounting
RFC 3414 User-based Security Model (USM) for version 3 of the Simple Network Management Protocol (SNMPv3)
RFC 3415 View-based Access Control Model (VACM) for the Simple Network Management Protocol (SNMP)
RFC 3418 Management Information Base (MIB) for the Simple Network Management Protocol (SNMP)
RFC 3576 Ext to RADIUS (CoA only)
RFC 4213 Basic IPv6 Transition Mechanisms
802.1r - GARP Proprietary Attribute Registration Protocol (GPRP)

IPv6
RFC 2461 IPv6 Neighbor Discovery
RFC 2463 ICMPv6
RFC 3162 RADIUS and IPv6
RFC 3306 Unicast-Prefix-based IPv6 Multicast Addresses
RFC 3315 DHCPv6 (client and relay)

MIBs
RFC 1212 Concise MIB Definitions
RFC 1213 MIB II
RFC 1493 Bridge MIB
RFC 1757 Remote Network Monitoring MIB
RFC 2096 IP Forwarding Table MIB
RFC 2233 Interface MIB
RFC 2571 SNMP Framework MIB
RFC 2572 SNMP-MPD MIB
RFC 2573 SNMP-Notification MIB
RFC 2573 SNMP-Target MIB
RFC 2574 SNMP USM MIB
RFC 2618 RADIUS Authentication Client MIB
RFC 2620 RADIUS Accounting Client MIB
RFC 2665 Ethernet-Like-MIB
RFC 2668 802.3 MAU MIB
RFC 2674 802.1p and IEEE 802.1Q Bridge MIB
RFC 2737 Entity MIB (Version 2)
RFC 2819 RMON MIB
RFC 2863 The Interfaces Group MIB
RFC 2925 Ping MIB
RFC 3414 SNMP-User based-SM MIB
RFC 3415 SNMP-View based-ACM MIB
RFC 3418 MIB for SNMPv3
RFC 3621 Power Ethernet MIB

Network management
IEEE 802.1AB Link Layer Discovery Protocol (LLDP)
RFC 2819 Four groups of RMON: 1 (statistics), 2 (history), 3 (alarm) and 9 (events)
ANSI/TIA-1057 LLDP Media Endpoint Discovery (LLDP-MED)
SNMPv1/v2c/v3

Security
IEEE 802.1X Port Based Network Access Control
RFC 1492 TACACS+
RFC 2865 RADIUS (client only)
RFC 2866 RADIUS Accounting
Secure Sockets Layer (SSL)
SSHv2 Secure Shell

HP 5120 EI Switch Series accessories

Modules

HP 5500 2-port 10GbE XFP Module (JD359B)
HP 5500 2-port 10GbE Local Connect Module (JD360B)
HP 5500 1-port 10GbE XFP Module (JD361B)
HP 5500/5120 2-port 10GbE SFP+ Module (JD368B)
HP 5500/4800 2-port GbE SFP Module (JD367A)

Transceivers

HP X125 1G SFP LC LH40 1310nm Transceiver (JD061A)
HP X120 1G SFP LC LH40 1550nm Transceiver (JD062A)
HP X125 1G SFP LC LH70 Transceiver (JD063B)
HP X130 10G SFP+ LC SR Transceiver (JD092B)
HP X130 10G SFP+ LC LRM Transceiver (JD093B)
HP X130 10G SFP+ LC LR Transceiver (JD094B)
HP X240 10G SFP+ to SFP+ 0.65m Direct Attach Copper Cable (JD095C)
HP X240 10G SFP+ to SFP+ 1.2m Direct Attach Copper Cable (JD096C)
HP X240 10G SFP+ to SFP+ 3m Direct Attach Copper Cable (JD097C)
HP X130 10G XFP LC LR Transceiver (JD108B)
HP X130 10G XFP LC SR Transceiver (JD117B)
HP X120 1G SFP LC SX Transceiver (JD118B)
HP X120 1G SFP LC LX Transceiver (JD119B)
HP X135 10G XFP LC ER Transceiver (JD121A)
HP X110 100M SFP LC FX Dual Mode Transceiver (JD497A)
HP X110 100M SFP LC LX10 Transceiver (JD498A)
HP X120 1G SFP LC BX 10-U Transceiver (JD098B)
HP X120 1G SFP LC BX 10-D Transceiver (JD099B)
HP X120 1G SFP RJ45 T Transceiver (JD089B)

Cables

HP X230 Local Connect 100cm CX4 Cable (JD364B)
HP X230 CX4 to CX4 3m Cable (JD365A)
HP 0.5 m Multimode OM3 LC/LC Optical Cable (AJ833A)
HP 1 m Multimode OM3 LC/LC Optical Cable (AJ834A)
HP 2 m Multimode OM3 LC/LC Optical Cable (AJ835A)
HP 5 m Multimode OM3 LC/LC Optical Cable (AJ836A)
HP 15 m Multimode OM3 LC/LC Optical Cable (AJ837A)
HP 30 m Multimode OM3 LC/LC Optical Cable (AJ838A)
HP 50 m Multimode OM3 LC/LC Optical Cable (AJ839A)
HP 0.5 m PremierFlex OM3+ LC/LC Optical Cable (BK837A)
HP 1 m PremierFlex OM3+ LC/LC Optical Cable (BK838A)
HP 2 m PremierFlex OM3+ LC/LC Optical Cable (BK839A)
HP 5 m PremierFlex OM3+ LC/LC Optical Cable (BK840A)
HP 15 m PremierFlex OM3+ LC/LC Optical Cable (BK841A)
HP 30 m PremierFlex OM3+ LC/LC Optical Cable (BK842A)
HP 50 m PremierFlex OM3+ LC/LC Optical Cable (BK843A)
HP X230 Local Connect 50cm CX4 Cable (JD363B)

Power Supply

HP RPS 800 Redundant Power Supply (JD183A)
HP RPS1600 Redundant Power System (JG136A)
HP RPS1600 1600W AC Power Supply (JG137A)

Power cords

HP X290 1000 A JD5 2m RPS Cable (JD187A)
HP X290 500/800 1m RPS Cable (JD190A)

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